Commentary

Invited Commentary: A Patient of Pulmonary Embolism and Online Conversational Learning among Global Medical Students through a Journal Review Platform

Introduction

Focused group discussion through use of an online communication technology provides students to engage in an online interactive training.[1] In this commentary we tried to give emphasis on conversational learning among medical students in a patient-centered case review discussion allowing them to critically think. Their collective inputs not only help each other improve their skills and illustrate a process of guided peer to peer learning but the archived conversations can also facilitate improved asynchronous learning outcomes for a larger audience of journal readers.

Methodology

The journal article to be reviewed was shared between the global medical student participants in an encryption-protected online group where these students critically appraised and reviewed the case report through collective conversational learning interactions. These students also had experience in doing a successful conversational peer-review exercise for other journals.[1] As the discussion progressed, commentary between the teacher and students centered on the case, and a review report was summarized. What follows below is the conversational commentary around this case.[2] (The teacher and the students are indicated by their initials).

Conversational Commentary

MS: For pleuritic chest pain D-dimer test should be ordered to rule out peripheral (PE). The recorded sensitivity, specificity, and accuracy of D-dimer test were 90%, 37.5%, and 76.6% respectively.[3]

RB: So even here there's a 10% chance to miss a pulmonary thromboembolism (PTE)?

AKG: There is 90% chance of thrombi and in this case PTE confirmed in the contrast-enhanced computed tomography (CECT). The authors should mention incidence of peripheral pulmonary embolism (PPE) as they suggest to consider it in the DDx.

VP: There is a potential of unnecessary tests even with MSK pain, if isolated pain is considered in the DDx?

RB: The authors need to highlight that it was the persistence of the pleuritic pain leading them to investigate further for pulmonary embolism and that is a unique selling point of their case report. Let's also search in the pubmed and Google scholar databases for a similar case report with the persistence of a symptom that should increase our suspicion for PTE. Also, can we explain why the pulmonary infarction pleural effusion pain should be persistent and this shouldn't be? What were the initial differentials made by the treating team?

MS: Initially the patient was treated for MSK pain in a different hospital with NSAIDS. When not recovered, the patient was brought to the current hospital where authors have ruled out all possible etiologies but haven't mentioned about them. On 2nd day, they saw focal area of collapse–consolidation in CECT but did not justify why they did D-dimer.

VP: Central PE is found in the trunk or in the main pulmonary artery, unlike peripheral which is found in segmental or subsegmental arteries.[4] In this case, the focal area involving the posterior segment of right lower lobe prompts a D-dimer test.

MS: A study found that among segmental and subsegmental groups, dyspnea was more common (18% and 24%, respectively) than chest pain (1 patient only).[5] Suspecting PE for an isolated chest pain may not be right to consider in the differentials because of low incidence.

VP: It could be a differential for persistent isolated pleuritic chest pain.

AKG: Why not acute rather than persistent?

VP: With acute isolated chest pain, physicians would have to do CT and D-dimer test leading to overdiagnosis and unnecessary treatment.

AKG: If all other tests come negative on day 1, should we treat MSK pain or go for CECT and D-dimer?

VP: Yes, history and risk factors need to be well-explored. The authors should add differentiating points between PE and MSK origin during isolated pleuritic chest pain? PE pain is usually abrupt and sudden onset. MSK pain can also commonly present with isolated pleuritic chest pain (emphasizing on persistence). It is far more common cause for coming to the emergency department.

RB: Yes differentials have a prioritization too. One week back MSK topped the list of DDx and 1 week later, PTE climbed up on the list of priorities due to the evolving information gathered over the week.

VP: The authors should discuss more around these case findings. Currently, their discussion is not centered on this particular case.

AKG: If this patient had come to them directly at the beginning (before passing 1 week and worsening condition), could they have gone further to evaluate it?

RB: We need some details on what the previous doctors did?

VP: Also besides the history of smoking habits, fever, cough, hemoptysis, dyspnea, syncope, palpitations, or weight loss, need to know risk factors around the Virchow's triad.

MS: They would have just gone to CECT which have led them to suspect PE. As they did now.

RB: Why? Did the pain increase from before or was it just persistence of the pain that led to the CT. We have to ask the authors to tell us.

RB: So eventually what was the patient's outcome? Did the authors mention that?

AKG: The patient outcomes are not clearly mentioned in this report.

MS: This paper emphasizes one point about the inclusion of PE as a differential diagnosis in pleuritic chest pain. So, we can slide if they have not mentioned follow-up.

RB: Yet for every case report, patient' outcomes would be an important purpose that needs to be accounted for. A case report is about the patient as a whole and should not have a focused point.

VP: If patient is on prophylaxis, how can we wait for a second event to occur?

RB: Just this much about how many days now since he is on anticoagulants. What is the average dose he is requiring? What happened to his prior symptoms? More about patient-related outcomes rather than disease-related outcomes.

RB: Have our case report authors detailed the nature of the chest pain in their patient (other than just saying pleuritic)? If they stick to pleuritic we have to think it was peripheral as pleural involvement in pulmonary embolism is generally due to peripheral pulmonary infarcts.

The entire collective conversational learning interactions and review summary report for the authors can be accessed with one click in the link we share.[6]

Conclusion

Collective, collaborative, conversational online learning around this case report provided students with an opportunity to dissect this pulmonary embolism case in an exploratory manner. The above conversations that the medical students included toward preparing a review summary that was eventually conveyed to the authors through the editor also demonstrate(s) the power of collective, collaborative online learning. This collective peer-reviewing exercise around a journal case report provided the students with learning points that also became an impetus necessary for preparing for the standard UG and PG examination questions around the topic of pulmonary embolism.

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